UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/425,151	10/21/1999	MEI DENG	DENG-556	9154

7590   04/22/2004

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EXAMINER
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ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _02 February 2004_ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
  closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-46_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-10,15-21 and 24-46_ is/are rejected.

7)☒ Claim(s) _11-14,22 and 23_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United
States before the invention thereof by the applicant for patent, or on an international application by another who
has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention
thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

2.   Claims 36-41 and 43 rejected under 35 U.S.C. 102(e) as being anticipated by Saleh et al.

(U.S. Patent No. 2003/0058804).

Referring to claim 36, Saleh et al discloses in figure 2 of a communication (zoned)

network under control of a single entity that includes nodes such as nodes 1-7 and link bundles

that interconnect the nodes (as in figure 2), where the link bundles that interconnect the nodes

(figure 2), where the link bundles are carried over physical spans of transmission facilities (as in

figure 2), the improvement comprising: the nodes includes information that imparts a

partitioning of network (Zone 200) into plurality of neighborhoods (Zone 201, Zone 202, Zone

203 and Zone204 as in figure 2, paragraph 0071), at least some of the neighborhoods including

more than one hop (as disclosed in figure 2, for example, zone 203 from node 1 to node 5 takes

more than one hop), with means in the nodes that allow traffic at a failed point in the network,

which point is also at a given neighborhood to be rerouted solely by changes in path within the

given neighborhood (Saleh et al discloses in figure 2 an paragraphs 0060-0067 that protocol

routes information at two different levels: inter-zone and intra zone. The former is only used

when the source and destination nodes of a virtual path are located in different zones. In the later

case, the border nodes in each transit zone originate and terminate the path-restoration request on

behalf of the virtual path's source and destination nodes. A border node that assumes the role of

a source or destination node during the path restoration activity is referred to herein as a proxy

source or destination node. In addition as disclosed in paragraph 0066 that restricting routing to

be within a zone prevents database corruption in one from form affecting the intra-zone routing

capability of other zones because routing within a zone is based solely on information

maintained within the zone.) Thus, allowing traffic at a failed point in the network to be rerouted

solely by changes (restoration) in paths within the given network as claim.

Referring to claim 37, Saleh et al discloses in figure 2 network of claim 36 where the

neighborhoods (zone 201-204) partially overlap each other by means of backbone 200 and

network nodes 213, 217, 222, 224, 234, 235, 241, 242 are all border nodes that connected to

more than one zone (partially overlap neighborhoods) as claim.

Referring to claims 38 and 39, Saleh et al discloses in figure 2 an paragraphs 0060-0067

that protocol routes information at two different levels: inter-zone and intra zone. The former is

only used when the source and destination nodes of a virtual path are located in different zones.

In the later case, the border nodes in each transit zone originate and terminate the path-restoration request on behalf of the virtual path's source and destination nodes. A border node that assumes the role of a source or destination node during the path restoration activity is referred to herein as a proxy source or destination node. In addition as disclosed in paragraph 0066 that restricting routing to be within a zone prevents database corruption in one from form affecting the intra-zone routing capability of other zones because routing within a zone is based solely on information maintained within the zone. Saleh et al further discloses in figure 2 and paragraph 0072, that end-to-end connections can span multiple nodes and zones and the endpoints of a VP can be configured to have a master/slave relationship. This signifies that master node is the control node and the slave node is the backup node. In this relationship, the node with a numerically lower node ID assumes the role of the master or source node and assumes all recovery responsibilities and that destination node (slave) simply waits for a message from the source/master node informing it of the VP's new path. Thus, Saleh et al discloses in sections 0071 and 0072 the responsibility for recovering from failures at points of the network is assigned (to a master node which is based on a numerically lower node ID) and distributed to different nodes (this relationship is distributed in each zone 201-204) of the network as claim.

Referring to claim 40, Saleh et al discloses in figure 2 and paragraph 0072 and where responsibility for each of a set of failure points of the network is assigned, for recovery purposes, to a node of the network as a control node (master node). Saleh et al further discloses in paragraph 0072 that the opposite convention, where a slave node may be configured to assumes all recovery responsibilities could easily be employed as claim.

Referring to claim 41, Saleh et al discloses in figure 2 and paragraph 0071-0072 where each node that is control node (master node) is adapted to direct nodes in its neighborhood, the protocol defines a convention in which the master node assumes all recovery responsibilities and the destination node simply waits for a message from the source node informing it of the VP's new path to reroute traffic in case of a detected failure as claim.

Referring to claim 43, Saleh et al disclose in section 0060-0067 of intra-zone routing, where routing is based solely on information maintained within the zone. Saleh et al further discloses in figure 2 and in sections 0071 and 0072 that a control node (master node, the node with a numerically lower node ID) that is responsible for each neighborhood (Zone 201-204) creates a re-routing plan (all recover responsibilities) for failure that might occur is its neighborhood (respective Zone 201-204) as claim.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-4, 17 and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Galand et al. in view of Tanaka et al. (U.S. Patent No. 6,633,538).

Referring to claim 1, 17 and 35, Galand discloses in figure 1 and respective portions of the specification of a communication network that includes nodes (101-108) and link bundles (109) that interconnect said nodes, where said link bundles are carried over physical spans of

transmission facilities. Galand also discloses in claim 1 and in column 9, lines 10-25 and column

9, lines 63 to column 10, lines 8 that when a link failure on trunk 109 between nodes 108 and

104 occurs, the trunk failure is detected by node 108 facilities. Due to the information contained

in the node 108, Topology Database may identify all ports whose traffic shall be distributed by

the link failure. A control message is then dispatched via the network Spanning Tree towards the

nodes 102, 103 and 105 and the control message is collected by each involved control agent in

charge of managing connection establishments for the users connected to the corresponding port.

In other words, Galand illustrates by example that intermediate (slave) node detects the failure

of trunk 109 associated with access (master) node 104, however, 108 directs other access nodes

to manage connections. Galand fails to disclose of a processing module that determines when a

failure occurs, whether the node of the processing module is a control node (master node) or a

backup node (slave node) when the master node is unresponsive. Tanaka et al teaches of

monitoring nodes and when detecting a failure in a node to be monitored, a node represents the

functions of the failed node. Tanaka et al discloses in figure 1 and in column 6, lines 1 to 30 that

each node includes a processing module (Process Unit 111 that determines, with respect to each

link bundle to which the node of said processing module is connected, whether said *node* of said

processing module is a control node (Master Node 110), where a control node is a node that

triggers rerouting in response to a failure indication associated with said link bundle, or is a

backup node, where a backup node (Slave node 120) is a node that triggers rerouting in response

to a failure indication associated with said link bundle when said control node is unresponsive

(When a slave node detects a failure in another node, the failure monitoring/representing process

unit 121B takes over and performs both functions provides by the node stopped due to the failure

and the monitoring of nodes to be monitored by the node; when the stopped node is a master

node 110, the slave node 120 is set so as to also function as a master nodes 110 as disclosed in

column 6, lines 23-30). Therefore, it would have been obvious to one of ordinary skill in the art

to modify the teachings of Galand to include the teachings of Tanaka with respect to a processing

module of the slave node taking over master node's functions in triggering rerouting when the

master node is unresponsive in order to enable system resources to be efficiently utilized and

restored without latency during a failure.

Referring to claim 2 and 3, Galand teaches in column 9, lines 9-25 and column 9, lines 63

to column 10, lines 10, that the communications module (the database within the node) is

adapted to receive status information form all nodes connected to each of the nodes (Topology

database identifies all ports whose traffic shall be distributed by the link failure and a control

message is dispatched via the Network Spanning tree towards node), and rebroadcasts the status

information to all nodes, except to the node connected to each of the nodes form which the status

information is received (broadcasting the number (N) throughout the network wherein each

network access node 105, 102, 103 affected by the trunk failure, the information required for

rerouting as disclosed in claim 1 and column 9, lines 63 to column 10, lines 10) as claim.

Referring to claim 4, Galand discloses in column 9, lines 9-25 and column 9, lines 63 to

column 10, lines 10, where each of the nodes further comprises a communication module (the

database within the node) that receives status information from the nodes connected to the each

of the nodes and rebroadcasts the status information (broadcasting the number (N) throughout

the network wherein each network access node 105, 102, 103 affected by the trunk failure, the

information required for rerouting as disclosed in claim 1 and column 9, lines 63 to column 10,

lines 10) to a computable set of nodes (access nodes 102, 103, and 105) connected to each node as claim.

5.   Claims 5-7, 10, 15, and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Arslan (U.S. Patent No. 5,706,276) in view of Hsing (U.S. Patent No. 6,167,025).

Referring to claims 5-7, 10, 15, and 16, Arslan teaches of system for restoration of communications network. Arslan discloses in column 2, figure 1 and respective portions of the specification of a network 100 the include link bundles 111-1 through 111-12 that interconnect digital crossconnect systems or Nodes. The link bundles are carried over physical spans of transmission facilities comprising a neighborhood 101 associated with each node, where neighborhood may be different in size from a distinct neighborhood 103 or 105. Cross-connect systems or Nodes comprise a processing module. Arslan teaches of column 4, lines 13-61 of restoration processors 115, modules 201, 203, 205, and 207, restoration manager 217 and functions 219, 221, 223, 225 perform respective aspects of the restoration process for different circuits. Furthermore, Arslan discloses in figure 2 and respective portions of the specification that in each processing module 215, upon receiving a failure condition, the restoration manager 217, integrates and controls the overall restoration for the circuit as claims 10 and 15. Arslan, however fails to specifically teach of a processing module associated with each node receives information about spare capacity in neighborhood and maintains a set of re-route plans or pointer, and receives information about a change in resource availability in neighborhood Mp that leads and processing module to conclude the a creation of re-route plans is in order. Hsing teaches in columns 4 and 5 of an apparatus for restoring network connection. Hsing further

teaches in columns 13-16 of a processing module that receives information about spare capacity in a particular and overlapping neighborhoods and maintains a set of re-route plans or pointers to such plans. The processing node in the neighboring down-stream switch node creates reroute plans whenever it receives information about a change in resource availability in a particular neighborhood. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Arslan to include the teachings of Hsing in order to reduce the overhead associated with re-route release messages since the re-routing release message includes unique call identifiers of multiple affected failures.

6.   Claims 7 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Arslan in view of Hsing as applied to claims 5-7, 10, 15, and 16 above, and further in view of Bentall et al. (U.S. Patent No. 6163525).

Referring to claim 7 and 8, Arslan in view of Hsing discloses receiving information about spare capacity in a particular neighborhood and maintaining of a set of re-route plans. Arslan in view of Hsing fails to disclose of the information indicating increase in spare capacity or decrease in spare capacity within a neighborhood. Bentall discloses in claims 1 and 2 and in column 6, lines 28-45 of a means for determining a plurality of alternative routes in the event of failure of part of the network (neighborhood) and a means for receiving information relating to the spare capacity of each link, and selecting at least one of the alternative routes one the basis of the received information. Selecting an alternative route signifies a decrease in spare capacity with that part of the network (neighborhood). Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Arslan in view of Hsing to include the

teachings of Bentall in order to accurately determine how many spare capacity links are available

for restoration.

7.   Claims 18-21 and 24-28 rejected under 35 U.S.C. 103(a) as being unpatentable over

Galand (U.S. Patent No. 6,038,212) in view of Tanaka et al. (U.S. Patent No. 6,633,538) as

applied to claims 1,17, 35 above, and further in view of Bentall et al. (U.S. Patent No. 6163525)

Referring to claim 18 and 19, Galand in view of Tanaka discloses of processing module

and broadcasting of information relating to failure to other nodes via ports. Galand in view of

Tanaka fails to disclose that the processing module is also designed to receive status change

information that includes spare capacity information form other apparatuses that is structurally

that same as the apparatus that is connected to apparatus via the ports and broadcasts the received

status change information to the ports. Bentall discloses in claim 1 and 2 and in column 6, lines

28-45 of a chooser node receiving information message relating to an amount of spare capacity

of each link. Bentall furthermore discloses in figure 9 and respective portions of the

specification of the step of broadcasting the receiving status change information to the ports of

all nodes to relinquish reserved capacity. Therefore, it would have been obvious to one of

ordinary skill in the art to modify the teachings of Galand in view of Tanaka to include the

teachings of Bentall et al in order for the efficiency of capacity allocation in the alternative routes

based on information received with respect to spare capacity to be optimized.

Referring to claim 20 and 21, Galand in view of Tanaka discloses of processing module

and broadcasting of information relating to failure to other nodes via ports. Galand in view of

Tanaka fails to disclose of a processing module that broadcasts the status change information

received via a first port to all other of ports of the apparatus other than to the first port. Bentall

furthermore discloses in figure 9 and respective portions of the specification of the step of

broadcasting the receiving status change information to the ports of all nodes to relinquish

reserved capacity. Since in step 145, figure 9 indicates that the chooser node broadcasts to all

nodes, chooser node does not broadcast to itself. Therefore, it would have been obvious to one

of ordinary skill in the art to modify the teachings of Galand in view of Tanaka to include the

teachings of Bentall et al in order to reduce processing delay for restoration.

Referring to claim 24 and 25, Galand in view of Tanaka discloses of processing modules

and a master/slave arrangement for trigger rerouting. Galand in view of Tanaka fails to disclose

the communication module receives status change information and acts in response to the status

change information by initiating a re-routing pre-planning process when the communication

module deems it advisable to account for the status change information. Bentall discloses in

claims 1-3 and respective portions of the specification that information relating to the spare

capacities is passed to the choose node (master node) and the chooser node selects the alternative

route (rerouting) on the basis of the link spare capacities determined at the outset. Therefore, it

would have been obvious to one of ordinary skill in the art to modify the teachings of Galand in

view of Tanaka to include the teachings of Bentall in order for the efficiency of capacity

allocation in the alternative routes based on information received with respect to spare capacity

to be optimized.

Referring to claims 26-27, Galand discloses in column 9, lines 63 to column 10, lines 9

that the processing module in node 108 generates a set of re-routing plans (a control message is

dispatched via the network Spanning Tree towards nodes 102, 103 and 105) that the processing

module generates a set of re-routing plans (to specifically addressed other apparatus 102, 103

and 105) for those failures for which the apparatus is a control nodes 104 as claim.

Referring to claim 28, Galand fails to disclose the processing module transmits the set of

rerouting plans that it generates for a given failure to at least an apparatus that is designated at

the backup apparatus for the given failure. Tanaka et al teaches of monitoring nodes and when

detecting a failure in a node to be monitored, a node represents the functions of the failed node.

Tanaka et al discloses in figure 1 and in column 6, lines 1 to 30 that a backup node (Slave node

120) is a node that triggers rerouting in response to a failure indication associated with said link

bundle when said control node is unresponsive (When a slave node detects a failure in another

node, the failure monitoring/representing process unit 121B takes over and performs both

functions provides by the node stopped due to the failure and the monitoring of nodes to be

monitored by the node; when the stopped node is a master node 110, the slave node 120 is set so

as to also function as a master nodes 110 as disclosed in column 6, lines 23-30). Therefore, it

would have been obvious to one of ordinary skill in the art to modify the teachings of Galand to

include the teachings of Tanaka with respect to the processing module transmitting set of

rerouting plans that it generates when designated as a backup (slave) in order to enable system

resources to be efficiently utilized and restored without latency during a failure.

8.   Claims 29-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (U.S.

Patent No. 6,167,025) in view of Moran et al (U.S. Patent No. 5,812,524).

Referring to claim 29, Hsing teaches apparatus for detecting faults and restoring

connections in network. Hsing teaches in column 5 and figure 12 of a restoration method based

on pre-planned hop-by-hop routing, the neighboring upstream switch from the failed link or

node, the switch adjacent the failed link or node on the side closest to the source device, attempts

to find an alternative route to the destination device on a per virtual connection basis. Hsing

disclose in column 16, 17, figures 7A and 7B and respective portions of the specification of

receiving a message (reroute setup message) indicative of a change in resource at another node,

the message included information re-reroute count and identifier of the switches which generated

the received messages. The information denotes broadcasting of messages to other nodes. Hsing

fails to explicitly teach that the re-route message contains the number of hops and the step of

broadcasting when the number of hops is less than a preselected number. Moran et al discloses a

deterministic selection of an optimal restoration route in a telecommunications network. Moran

et al discloses in figures 3A-3E and in column 7, lines 47 to column 8, lines 31 of a method

carried out at a network node comprising the step of: receiving a message at node 10 indicative

of a change in resources at another node, the message including regarding number of hops

through which message arrived at the network node (an attribute of the restoration messages is

the hop count, as indicated in field 24, for alternative routes 3B has a hop count of 4, #C has a

hop count of 3; thus as shown in figures 3A-3E, the optimal alternate route chosen by chooser

node 10 is alternate route 8-4-10 because not only does it have the lowest mileage, but also

requires the least number of hops between nodes); when the information denotes that the number

of hops is less than a preselected number, broadcasting the message to other nodes (once a

decision on an optimal route is made, chooser node 10 constructs a reverse restoration message

and subsequent to calculations, the message is broadcasted to other nodes as disclosed in column

8, lines 1-31). Therefore, it would have been obvious to one of ordinary skill in the art to modify

the teachings of Hsing to include the teachings of Moran in order to optimally restore the

disrupted traffic by efficiently choosing the shortest distance value.

Referring to claims 30-32, Hsing further teaches in figures 14 and 17 and 18B and the

respective sections of determining whether message call for a recreation of re-routing plans and

initiates a process of creating re-routing plans and transmitting rerouting plans upon their

completion in process for creating, to nodes that involved in execution of re-routing plans.

Hsing fails to discloses the step of directing the nodes that are involved in execution of a

particular one of the re-routing plans when the network node detects a failure that calls fro the

particular one of the re-routing plans to be put into effect. Moran also disclose in figures 3A-3E

and respective portions of the specification of determining whether the message calls for a

recreating of rerouting plans and initiating a process for creating re-routing plans when the step

of determining indicates it advisable and transmitting re routing plans upon their completion to

nodes that are involved in execution of re-routing plans. Moran discloses in column 9, lines 7-64

that the nodes that are involved in executing a re-routing plan upon a detection of failure are

directed to implement a rerouting optimal plan based on the shortest distance. Therefore, it

would have been obvious to modify the teachings of Hsing to include the teachings of Moran in

order to restore traffic by efficiently choosing to reroute by choosing the shortest distance path.

9.   Claims 33 and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing in

view of Moran as applied to claims 29-32 above, and further in view of Burdett.

Referring to claims 33 and 34, Hsing in view of Moran fails to teach of transmitting each

re-routing plans to respective backup nodes and keeping re-routing plans in local storage and

transmitting reroute information to each node involved. Burdett teaches of fault tolerant

communication system. Burdett discloses in column 7 and claims 9-13 that control processor

redirects traffic based on a failed link or status change and generates a plan and provides

instruction to the backup processor of the redirecting path. Burdett also discloses of control

process updates, maintains and control the state of each of processor nodes and informs the

nodes that are involved in execution of the transmitted reroute plan. Therefore, it would have

been obvious to one of ordinary skill in the art to modify the teachings of Hsing in view of

Moran to include the teaching of Burdett in order to efficiently transmit message corresponding

to change in resources and reroute plans to reduce latency.

10.   Claims 42 rejected under 35 U.S.C. 103(a) as being unpatentable over Saleh et al. in view

of Tanaka et al. (U.S. Patent No. 6,633,538).

        Referring to claim 42, Saleh et al discloses in figure 2 and respective portions of the

specification that slave (backup) nodes may be employed to assume the role of recovery (reroute)

responsibilities. Saleh et al further teaches in section 0060-0067 of intra-zone routing, where

routing is based solely on information maintained within the zone. However, Saleh et al fails to

discloses where each node that is a backup node is adapted to direct nodes that are in the

neighborhood of its associated control node to reroute traffic in case of a detected failure, and a

condition wherein its associated control node is unable to reroute traffic. Tanaka et al teaches of

monitoring nodes and when detecting a failure in a node to be monitored, a node represents the

functions of the failed node. Tanaka et al discloses in figure 1 and in column 6, lines 1 to 30 that

each node includes a processing module (Process Unit 111 that determines, with respect to each

link bundle to which the node of said processing module is connected, whether said node of said

processing module is a control node (Master Node 110), where a control node is a node that

triggers rerouting in response to a failure indication associated with said link bundle, or is a

backup node, where a backup node (Slave node 120) is a node that triggers rerouting in response

to a failure indication associated with said link bundle when said control node is unresponsive

(when a slave node detects a failure in another node, the failure monitoring/representing process

unit 121B takes over and performs both functions provides by the node stopped due to the failure

and the monitoring of nodes to be monitored by the node; when the stopped node is a master

node 110, the slave node 120 is set so as to also function as a master nodes 110 as disclosed in

column 6, lines 23-30). Thus, each node that is a backup node is adapted to direct nodes that are

in the neighborhood of its associated control node to reroute traffic in case of a detected failure,

and a condition wherein its associated control node is unable to reroute traffic. Therefore, it

would have been obvious to one of ordinary skills in the art to modify the teachings of Saleh et al

to include the teachings of Tanaka with respect to backup node functioning to be a master node

when the associated control (master) node is unable to reroute the traffic in order to enable

system resources to be efficiently utilized and restored without latency during a failure.

11.   Claims 44-46 rejected under 35 U.S.C. 103(a) as being unpatentable over Saleh et al in

view of Tanaka et al. as applied to claim 42 above, and further in view of Croslin (U.S. Patent

No. 5,881,048).

        Referring to claim 44-46, Saleh et al disclose in section 0060-0067 of intra-zone routing,

where routing is based solely on information maintained within the zone. Saleh et al further

discloses in figure 2 and in sections 0071 and 0072 that a control node (master node, the node

with a numerically lower node ID) that is responsible for each neighborhood (Zone 201-204)

creates a re-routing plan (all recover responsibilities) for failure that might occur is its

neighborhood (respective Zone 201-204) where the control nodes directs nodes in its

neighborhood to re-route traffic. Saleh et al fails to disclose that control node directs, in

accordance with a re-routing plan (having subject node re-routing plan to node in the

neighborhood) previously created by the control node, when a failure is detected. Croslin

discloses in column 14, line 63 to column 15, lines 35 of a method that allows a single failure

span to have a corresponding restoration per-plan needed for that portion of the network. Thus,

implying when a failure is detected, a previously created re-routing plan can be incorporated.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings

of Saleh et al in view of Tanaka et al by incorporating the teaching of Croslin that allows a single

failure span to have a corresponding single restoration plan in order to increase the efficiency of

restoration by reducing processing delay.

Allowable Subject Matter

12.   Claims 11-14, 22, and 23 objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitation of the base

claim and any intervening claims.

Response to Arguments

13.   Applicant's arguments with respect to claims 1-46 have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

Any response to this action should be mailed to:

> Commissioner of Patents and Trademarks
> Washington, D.C. 20231

Or faxed to:

> (703)305-3988, (for formal communications intended for entry)

Or:

> (703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 703-305-5639. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

cgs
April 9, 2004

Ajit Patel
Primary Examiner